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rius belong to the glossopharyngeus, and are stated to rise from a group of small cells which lies mesial and cephalad of the F. gracilis, at the level of the superior pyramidal decussation.

Beiträge zur Kenntnis des Centralnervensystems von Lumbricus. BENEDICT FRIEDLÄNDER. (Berlin.) Zeit. f. wiss. Zool. Bd. 47, pp. 47-83, pl. IX, X, September, 1888.

The author's chief attention was directed to the relationships and not to the ultimate structure of the histological elements. Of the three problematical "neural canals" or "giant fibres" of Leydig, the two lateral ones are shown to be directly continuous with the processes of ganglion cells at the posterior end of the ventral nerve cord, while all three at the anterior part are connected with common nerve fibres. The sheaths of these three structures are composed of connective tissue fibres, and are not comparable to the medullary sheath of vertebrate nerve fibres: the contents is a homogeneous plasma that may be squeezed out in elongated masses. Each lateral "giant fibre" receives the ascending processes of several large bipolar ganglion cells lying ventrally in successive ganglia near the posterior end of the cord, while its most posterior connection is with the similar process of an unipolar ganglion cell. These ascending processes of ganglion cells are connected with one another by transverse processes, and these in turn with the median "giant fibre." Though thus composed of fused cell processes, the "giant fibres" appear quite homogeneous in all the best preparations, and no indication of such complexity of structure as that claimed by Nausen could be obtained, though the author will not deny that such structure may exist. Artificial and deceptive results, due to imperfect means of hardening, are common and difficult to avoid. The "giant fibres" are undoubtedly nervous structures of unknown function; their sheaths may have acquired a secondary importance as aiding in stiffening the ventral nerve cord.

E. A. A.

Histologische Untersuchungen über das Nervensystem von Amphioxus. E. ROHDE. Zool. Anzeiger XI, 190; Vorläufige Mittheilung. Abstract in Centralbl. f. Physiol. No. 10, 1888, by Paneth.

This paper gains much interest from the recent description of colossal nerve fibres in the ventral cord of Lumbricus and other worms. The central nervous system consists, in Amphioxus, of cells which lie near the central canal, and of fibres surrounding them. The supporting substance is formed by the basal prolongations of the ependyma cells. In some cases the prolongations are branched, forming a fine network. The ganglion cells are uni-, bi-, or multipolar, the last being most numerous. Their prolongations form the external nervous substance, which is mainly constituted of fine longitudinally coursing nerve fibres, in which dichotomous divisions are frequent. There are, moreover, a number of very large fibres, definite in both number and position, which arise from large multipolar ganglion cells. These prolongations are of two kinds; all except one lose their size by repeated divisions and form fine longitudinal fibres, while this one passes without any diminution in size, caudad to the other end of the cord. The paired fibres from the anterior end arise from twelve ganglion cells. There is an